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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/784,815

02/24/2004

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54166

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26474 7590 04/30/2008
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EXAMINER

ZEMEL, IRINA SOPHIA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/784,815	Applicant(s) SCHERZER ET AL.	
	Examiner Irina S. Zemel	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,14 and 21-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,14 and 21-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5-5-06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 5, 24-41 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6045899 to Wang et al., (hereinafter "Wang").

The rejection stands as per reasons of record.

Claim Rejections - 35 USC § 102/1-3

Claims 1, 5, 14, 24-41 re rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US Patent 7,045,082 to Deitzen et al., (hereinafter Deitzen), or under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 1333051 to BASF (document corresponding toe US '082 patent).

The rejection stands as per reasons of record.

The disclosure of both reference is discussed in the previous office action. As stated in the previous office action, the reference does not expressly discuss the cell size and the open cell content of the foams, however in view of identical processing conditions disclosed in the reference and in illustrative examples of the instant specification, the claimed parameters are believed to have been inherently met by the

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foams disclosed in the references. It is further noted that the illustrative examples in the cited references use polyether sulfones of lower molecular weight (i.e., 1010 and 2010) as compared to the only exemplified polymer of the instant application, i.e, 3010 E BASF grade polyether sulfone (also used in the reference). The reference also discloses blends of polyether sulfones of different molecular weights. It is reasonable to assume that the processing temperatures at which the closed (and open) cell structures are formed are lower for lower molecular weight polymers than higher molecular weight polymers as the tension properties of heated polymers of lower and higher viscosity are different. Thus, the processing temperatures of 250.2 degrees (which are less than 2 degrees below the lower temperatures disclosed as satisfactory for higher molecular weight polymers) will necessarily satisfy the conditions of being "2 to 20 C higher than the temperatures at which the closed cell structures are formed" . (it is emphasized once again, that the necessary processing conditions disclosed in the instant specification with respect to conditions necessary to achieve closed cell foams, and not actual characteristics of underlying polymer, such as respective Tg, or Mw, or anything else).

The examiner already stated that the US PTO has no facilities to actually conduct the experiments and to obtain the actual results, and provided reasoning why it is reasonably believed that the conditions disclosed in the cited reference necessarily will result in the claimed cell structure. The burden was shifted to the applicants to provide factual evidence to the contrary, however the applicants failed to meet their burden.

Claims 1, 5, 14, 24-41 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US Patent 5,084,484 to Nintz et al., (hereinafter "Nintz").

The rejection stands as per reasons of record.

Response to Arguments

Applicant's arguments filed 2-5-2008 have been fully considered but they are not persuasive.

Regarding the election of species requirement the applicants argue that the Examiner has not met her burden in requiring election of species for examination purposes. This argument was previously presented by the applicants and was answered in detail in the previous office action. The applicants were advised that "the election of the species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the species unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other species." It is the applicants that chosen NOT to traverse on the grounds that the claimed species are not patentably

distinct, as the applicant did not any submit evidence or identify such evidence now of record showing the species to be obvious variants.

With respect to the rejection over Wang, the applicants argue that the Wang reference does not disclose foams as "[f]oams are materials which have open and/or closed cells distributed across their entire bulk, and which have an envelope density lower than that of the structural substance" by applicants own definition. While the applicants may be their own lexicographers, their definitions can not limit conventional definition of the terms, and, moreover, the limitations from the specification are not to be read into claims. Moreover, it's the examiners job to give the claims their broadest reasonable interpretation. As the definition of foam, for example, from Merriam dictionary is "a material in a lightweight cellular form resulting from introduction of gas bubbles during manufacture", and, generally, in the art of polymer foams, the "foam" is nothing more than a cellular material, the examiner simply can not agree with the applicants interpretation of the term "foam" as necessarily having cells distributed across their entire bulk or "which have an envelope density lower than that of the structural substance", whatever this means and whatever is meant by "envelope density" and "structural substance". Insofar as materials having cellular structure, the figures of Wang CLEARLY provide necessary evidence to that fact – the membranes are clearly cellular and have plurality of voids resulted from introduction of air/gas.

It is further noted that the inherency arguments were only used to establish the claimed processability, and not the actual cell size or cell distribution. Those characteristics, contrary to the applicants assertion can be ascertained with particularity

from the figures of Wang, for at least some, however small, top portion of the cellular membranes of the Wang's invention. In the absence of any limitations to the size of actual distribution of the cells throughout the body of the membrane, ANY portion of the membrane having the claimed characteristics meets the instant claims.

The applicants argue that the examiner did not present rationale while the product obtained by the process disclosed in Deitzen necessarily exhibit the claimed characteristics. The examiner addressed similar arguments made by the applicants in the previous office action with respect to rejection over Nintz. It is noted that the examiner did present the rationale why it is reasonable believed that the process disclosed in Deitzen will necessarily result in the claimed characteristics. As the process conditions are substantially similar to the conditions used in the illustrative examples of the present specification, and further in view of lack of exemplification of guidance as to how to select such temperatures for any polymer other than polyether sulfone of a specified grade 3010 E BASF. Also, as discussed above, the reference discloses processing of several grades of polyether sulfones with different molecular weights, which conditions appear to satisfy the discussed 2 to 20 C higher than the temperatures at which the closed cell structures are formed. Thus, based on the totality of the evidence it was concluded that the reference necessarily discloses at least some embodiments that appear to be substantially similar to the claimed product. It is noted that ONCE A REFERENCE TEACHING PRODUCT APPEARING TO BE SUBSTANTIALLY IDENTICAL IS MADE THE BASIS OF A REJECTION, AND THE

EXAMINER PRESENTS EVIDENCE OR REASONING TENDING TO SHOW INHERENCY, THE BURDEN SHIFTS TO THE APPLICANT TO SHOW AN UNOBVIOUS DIFFERENCE. See MPEP 2112.V. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on 'inherency' under **35 U.S.C. 102**, on '*prima facie* obviousness' under **35 U.S.C. 103**, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980). In *In re Fitzgerald*, the court has found that objective evidence was required to rebut the **35 U.S.C. 102/ 103** *prima facie* case as the only difference was in the processing conditions that do not necessarily result in differences of the claimed product characteristics.

With respect to the rejection over Nuntz reference, the applicants state that the reference provides no temperature range for obtaining foams with high open cell factor. To support their position, the applicants state that "the polyether ketones used in examples 1 to 4 of the *Nintz et al.* reference have melting points in the range of 300 to 400°C, and a glass transition temperatures in the range of 130°C to 200°C. The Examiner acknowledges that "the processing temperatures in all of the illustrative examples are about 35 - 55 [°]C higher than the melting temperatures of the corresponding polymers...,25 In other words, the foaming temperature utilized according to the *Nintz et al.* reference is more than 100°C higher than the glass transition temperature of the thermoplastics employed. On the other hand,

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according to the examples of the present invention a polyether sulfone having a glass transition temperature of 225°C is foamed. The foaming temperature is about 25 to 30°C higher than the glass transition temperature of the thermoplastics employed.” This analysis provided by the applicants appears to be quite artificial and peculiar especially in view of the fact that the applicants compare normally crystalline PEEK with amorphous polyether sulfones (PESU), which do NOT even exhibit melting points (as evident from attached DE 42 00 311 document). It is further noted that Nunitz reference refers to the melting temperatures of PEEKs as "softening points", since the viscosity characteristics (and melt tension) are of primary considerations in production of foams. Thus the correct comparison would be not the actual T_g of the two polymers, but the temperatures at which the polymers become suitable for foam forming, which is T_g for amorphous polymers having no T_m and T_m for crystalline polymers. Comparing PEEKs of Nunitz that soften or melt to the state suitable for foam production T_m, and PESU of the instant application that exhibit no T_m, and soften at about T_g to the state suitable for foam production, the processing temperatures for compositions of Nunitz and the examples of the instant invention exceed the respective "softening" temperatures by about the same temperature difference of about 20-40 C.

Once again, it is noted that the suitable temperatures for forming the open cell product are given by the way of referencing conditions sufficient to produce closed cell structures for a given polymer, and not its actual characteristics, such as T_g or T_m. Thus, the applicants comparison of two different types of polymers, one having T_m and another not having T_m is not seen as any credible basis for assertion that Nunitz does

not provide conditions for open cell-formation. The applicants were invited to provide factual evidence to that fact (which the examiner would be happy to consider and accept as rebuttal of the prima facie obviousness), however, the applicants failed to provide such and provided only arguments which, as discussed above, are not considered convincing.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Irina S. Zemel/
Primary Examiner, Art Unit 1796

Irina S. Zemel
Primary Examiner
Art Unit 1796

ISZ